Tex-222-F, Sampling Bituminous Mixtures

Overview

Effective date: August 1999 to October 2004

Use this method to sample mixtures of bituminous materials. Several sampling procedures are described.

Selecting Samples

The sampler must use every precaution to obtain samples that are representative of the bituminous mixtures, to avoid segregation, and to prevent contamination by foreign matter.

Each sample container must be accompanied by a Form 202, 'Material Sample Identification.'

Sample Size

When sampling any type of bituminous mixture to be tested later in a laboratory, a quantity of the material that will fill a 4 L (1 gal.), friction-top bucket must constitute the minimum sample size.

If extensive testing is desired, submit two or more buckets of the material, as required. All material submitted must be blended to form a composite sample prior to quartering to size for laboratory tests.

Sampling Procedures

- Sampling Plant-Mixed Bituminous Mixtures

Bituminous mixtures may be obtained at the plant using either Method (A) or (B) as described below.

NOTE: A proper sampling stand must be provided and adequate safety precautions taken to prevent bodily injury.

- Method A – Samples will be taken from trucks or railroad cars according to the following:

Sampling Plant-Mixed Bituminous Mixtures - Method A	
Step	**Action**

Sampling Plant-Mixed Bituminous Mixtures - Method A	
Step	**Action**
1	Obtain multiple representative samples from the truck bed or railroad car. ♦ View the mix after loading is complete. Note areas of obvious segregation and avoid taking samples from these locations. ♦ Take all necessary safety precautions when obtaining these samples. Avoid walking or standing on the hot mix while taking these samples.
2	Dig a minimum of 300 mm (12 in.) below the surface and remove at least 4.5 kg (10 lbs.) of material from each of the sections.
3	All of the samples will be combined and mixed together thoroughly.
4	The combined sample will then be split into individual samples according to Test Method "Tex-200-F, Sieve Analysis of Fine and Coarse Aggregates."

- Method B

Sampling Plant-Mixed Bituminous Mixtures - Method B	
Step	**Action**
1	Fill the bucket of a front-end loader with mix directly from the discharge chute. NOTE: The bucket must be free of all materials which may contaminate the sample.
2	Take samples from several locations in the pile to form a composite minimum sample of 13.5 kg (30 lbs.) of material from several different locations in the bucket.
3	Then split the sample into individual samples according to Test Method "Tex-200-F, Sieve Analysis of Fine and Coarse Aggregates."

Bituminous mixtures may be obtained from stockpiles at the plant by obtaining equal quantities of the mixture from holes dug into points near the top, middle and bottom of the stockpile.

♦ Sampling Bituminous Mixtures from Windrows

Use the following steps to sample bituminous mixtures from windrows.

Sampling Bituminous Mixtures from Windrows	
Step	**Action**
1	Take a representative sample of the windrow at intervals of not more than 152 m (500 ft.).
2	Combine to form a composite sample, quarter to size according to Test Method "Tex-200-F, Sieve Analysis of Fine and Coarse Aggregates," and test.
3	Whenever practical, secure samples from a complete cross-section of material approximately 100 mm (1 ft.) wide.
4	When the full depth of the cross-section is sampled, take care to exclude any foreign matter.

♦ Sampling Bituminous Mixture Cores from the Roadway

Use the following steps to sample bituminous mixtures from the roadway.

Sampling Bituminous Mixture Cores from the Roadway	
Step	**Action**
1	Sample in a cool part of the day to facilitate removal of the pavement specimen with minimum possibility of damage.

Sampling Bituminous Mixture Cores from the Roadway	
Step	**Action**
	♦ If samples must be taken in full heat, use ice, dry ice, or carbon dioxide to cool the pavement area to be sampled.
2	Take core samples when equipment is available. ♦ Cores must have minimum diameter of 100 ± 6 mm (4 ± 0.25 in.).
3	Remove a minimum of three samples at each location unless otherwise stated in the specification.
4	♦ Wipe the sample surface dry with a cloth, individually wrap in paper or rags, and pack tightly in 4 L (1 gal.) buckets, if shipping to a central laboratory for testing. ♦ Sufficiently identify each individual core.
5	Remove large pavement samples for testing, if required.
6	♦ Use the sharp, narrow cutting blade of a mattock (or other means) to pry loose a sample approximately 457 mm (18 in.) square from the roadway pavement. ♦ Take extra care in removing and transporting the sample to prevent cracking.
7	♦ Place the sample between two clean pieces of 19 mm (0.75 in.) thick plywood, with the smoothest, cleanest surface of the sample down, and tie securely with heavy cord. ♦ Transport the sample with the smooth side remaining down.
8	To prevent evaporation of the moisture of a pavement sample, and/or the hydrocarbon volatiles of cold-laid mixtures, wrap the sample in aluminum foil.

- ♦ Sampling Loose Material from behind Laydown Machine
  - Sample after approximately one-half of the truck load has passed through the laydown machine, either from various points in front of the screed on the machine or from various points immediately behind.
- ♦ Sampling Rapid Curing Asphalt Patching Mix
  - Approximately 14 kg (30 lbs.) of sample is required for specification tests on this material.
  - Submit one sample for each 45 Mg (50 tons) or fraction thereof.

Sampling Rapid Curing Asphalt Patching Mix	
If the material is…	**then…**
purchased in 23 kg (50 lb.) pails,	select, at random, one or more pails as necessary and submit as the sample.
supplied in 200 L (55 gal.) drums,	♦ select a drum at random, open, scrape aside or remove approximately 51 mm (2 in.) of material, and dig out a 14 kg (30 lbs.) sample and place in a pail. ♦ immediately seal the pail and the 200 L (55 gal.) drum to prevent loss of volatiles.